

WOAN DECLARATION EXHIBIT 15

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And All Others Similarly Situated

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

JOHN NYPL, et al.
Plaintiffs,

v.

JP MORGAN CHASE & CO., et al.
Defendants.

Case No.: 15 Civ. 9300 (LGS)

**DECLARATION OF CARL S. SABA IN
REBUTTAL TO MARCH 4, 2021 REPORT
OF BRUCE A. STROMBOM**

1 I, Carl S. Saba, declare as follows:

2 1. I am a partner in the Forensic and Financial Consulting Services Group at Hemming
3 Morse, LLP, certified public accountants, and have been engaged by Plaintiffs' counsel as a
4 consultant in connection with the above-captioned case. I make this Declaration for purposes of
5 rebuttal of Dr. Bruce Strombom's March 2021 report. Except as otherwise stated, this Declaration is
6 based on my personal knowledge and, if called upon to do so, I could and would testify competently
7 to the facts stated herein.

8
9 **Introduction and Qualifications**

10 2. I am a Certified Valuation Analyst (CVA) and have been a member of the National
11 Association of Certified Valuators and Analysts since June 2007. I am also an Accredited Senior
12 Appraiser (ASA) in businesses and intangible assets with the American Society of Appraisers, and
13 Accredited in Business Valuation (ABV) with the American Institute of Certified Public
14 Accountants. Among my professional activities, I am a Co-founder and Chair of the Executive
15 Committee of the Fair Value Forum. I am also a past Board Member and President of the Valuation
16 Roundtable of San Francisco. A current version of my curriculum vitae is attached to this
17 declaration as Exhibit A.

18 3. I have testified as an expert on economic damages, valuation, and financial analysis
19 in 36 depositions, and 17 trials and arbitrations. I have also been retained in many other litigation
20 matters in which I provided an expert report or declaration that did not result in oral testimony. My
21 prior experience includes expert work in anti-trust litigation matters, and my valuation expertise
22 includes work related to the traded public markets for securities and digital currencies.

23
24 **Analysis and Rebuttal of Dr. Strombom**

25 4. I understand that Defendants have entered into Plea Agreements where they disclosed
26 that they conspired to manipulate benchmark exchange rates for the EUR/USD currency pair in the
27 foreign exchange ("FX") Spot Markets. Specifically, Defendants in the capacity of dealers on the
28 FX Spot Markets "engaged in a conspiracy to fix, stabilize, maintain, *increase or decrease* the price

of, and rig *bids* and *offers* for, the EUR/USD currency pair exchanged in the FX Spot Market, by agreeing to *eliminate competition* in the purchase and sale of the EUR/USD currency pair”¹.

5. In their participation “in the conspiracy from at least as early as December 2007 and continuing until at least January 2013”² Defendants manipulated the benchmark FX Spot Market bid and offer exchange rates for the EUR/USD currency pair.

6. It is my understanding that Plaintiffs in *Nypl v. JP Morgan* were defined as:

“Consumers and businesses in the United States who directly purchased supracompetitive foreign currency at Benchmark exchange rates from Defendants and their co-conspirators for their own end use at least since January 1, 2007 to [December 31, 2013].”

7. In my April and August 2020 Declarations, I provided analysis on the causation of damages to Plaintiff End-users, and provided a methodology for estimating damages to Plaintiff End-users.

8. As discussed in my 2020 Declarations, the principal component of pricing all transactions entered into by Plaintiff End-users is the FX Spot Market price, a benchmark exchange rate which Defendants admitted to manipulating in their Plea Agreements. [REDACTED]

[REDACTED] As such, [REDACTED]

[REDACTED] Therefore, [REDACTED]

9. I have reviewed Dr. Strombom’s Report and deposition testimony, in which he makes claims that FX Spot market price manipulations are “episodic” and “multidirectional”. His conclusions are inconsistent with the manner in which the FX Spot Market functions with two-way prices described by this Court in *In Re Foreign Exchange Benchmark Rates Antitrust Litigation*, 1:13-cv-07789-LGS DOC 1331 (“*Forex*”) at page 2 as follows:

¹ Citicorp Plea Agreement, May 20, 2015, ¶ 4(g), JP Morgan Plea Agreement, May 20, 2015, ¶ 4(g).

² Citicorp Plea Agreement, May 20, 2015, ¶ 4(g), JP Morgan Plea Agreement, May 20, 2015, ¶ 4(g).

1 “A liquidity provider will quote ‘two-way prices’ – a ‘bid’ price (the price at which a dealer
2 is willing to purchase a currency) and an ‘ask’ price (the price at which the dealer is willing
3 to sell a currency). The difference between the bid price and ask price is known as the ‘bid-
4 ask spread’ or ‘spread’...Liquidity providers generally want wider spreads, which allow them
5 to buy lower and/or sell higher, thus increasing profits.”

6 10. The conspiracy affected the FX Spot Market spread in two ways. First, Defendants
7 fixed the offer (also known as the ask) price on the EUR/USD currency pair. To be economically
8 beneficial to Defendants, the ask price is fixed by *increasing* it, i.e., by offering to charge a higher
9 price in US Dollars to sell a customer Euros. As a result, the customer is damaged by paying an
10 overcharge and receiving fewer Euros in exchange for its US Dollars. Dr. Strombom’s “multi-
11 directional” understanding of the conspiracy theory is nonsensical because it is contrary to the two-
12 way pricing described by this Court in its *Forex* Opinion at p.2 and par. 4 (e) of the Plea
13 Agreements, and it would result in Defendants having conspired at times to *decrease*, rather than
14 increase, the offer price *to their own detriment* by charging fewer US Dollars for Euros they were
15 selling to their customers.

16 11. Second, Defendants fixed the bid price on the EUR/USD currency pair. To be
17 economically beneficial to Defendants, the bid price is fixed by *decreasing* it, i.e., by offering to pay
18 a lower price in US Dollars to purchase a customer’s Euros. As a result, the customer is damaged by
19 receiving fewer US Dollars in exchange for its Euros. Dr. Strombom’s “multi-directional”
20 understanding of the conspiracy is nonsensical because it would require Defendants to have
21 conspired to at times *increase*, rather than decrease, the bid price, i.e., to conspire *to their own*
22 *detriment* to pay more US Dollars for Euros they were purchasing from their customers. It is not
23 reasonable to think that Defendants—leading banks—conspired against their own interest, to sell
24 currency at a cheaper price to their customers, and to buy it at a more expensive price from their
25 customers.

26 12. The above explanation exemplifies that Defendants’ interests were to conspire to
27 “widen the spread,” a fact which I believe was acknowledged by this Court when it noted that
28 “[l]iquidity providers generally want wider spreads, which allow them to buy lower and/or sell

1 higher thus increasing profits”³. The spread is the difference between the higher offer (ask) price
 2 and the lower bid price. To widen the spread, in a way that is beneficial to Defendants, is to (a)
 3 decrease the bid price at which Defendants purchased the Euro and /or to (b) increase the ask price
 4 at which Defendants sold the Euro. This spread represents the profit margin earned by Defendants
 5 on exchange transactions, and to increase, or widen it, is the mechanism by which Defendants
 6 sought to gain supracompetitive profits through the advancement of their conspiracy. Defendants
 7 would have no incentive to conspire to narrow the spread.

8 13. Dr. Strombrom states that “...the Plea Agreements make no mention of spread
 9 manipulation, as acknowledged by Mr. Saba...”⁴ His statement is misleading. The plain English
 10 meaning of Defendants “engaged in a conspiracy to fix, stabilize, maintain, increase or decrease the
 11 price of, and rig *bids* and *offers* for, the EUR/USD currency pair exchanged in the FX Spot Market,
 12 by agreeing to eliminate competition in the purchase and sale of the EUR/USD currency pair,” is
 13 that Defendants conspired to *manipulate the bid and offer prices*, and the difference between those
 14 prices is the spread. Manipulation of either the bid or offer price will logically result in manipulation
 15 of the spread, the phrase “spread manipulation” is not needed in the Plea Agreements to reach this
 16 conclusion. In addition, I note that the Plea Agreements include the definition of a spread:⁵

17 *“A dealer may provide price quotes to potential customers in the form of a “bid/ask spread,”*
 18 *which represents the difference between the price at which the dealer is willing to buy the*
 19 *currency from the customer (the “bid”) and the price at which the dealer is willing to sell the*
 20 *currency to the customer (the “ask”). A dealer may quote a spread, or may provide just the*
 21 *bid to a potential customer inquiring about selling currency or just the ask to a potential*
 22 *customer inquiring about buying currency.”*

23 14. Dr. Strombom further states that my analysis fails to account for the fact that
 24 damages to Plaintiffs should be offset by gains to Plaintiff End-users. He goes on to explain what he
 25 means by netting and offsetting of redemptions and its effect on a damage analysis, claiming that

26
 27 ³ In Re Foreign Exchange Benchmark Rates Antitrust Litigation, Opinion and Order Dated September 3, 2019, p.2.

⁴ Expert Report of Bruce Strombom, March 4, 2022, par. 10.

28 ⁵ Citicorp Plea Agreement, May 20, 2015, ¶ 4(e), JP Morgan Plea Agreement, May 20, 2015, ¶ 4(e).

1 “an appropriate damages methodology must add up the impact of Defendants’ alleged trader
2 misconduct across each putative class member’s Euro purchases from (and redemptions to)
3 Defendants during the Proposed Class Period, netting gains and losses”⁶. He goes on to claim that
4 “...some putative class members may have benefited, in aggregate, from Defendants’ alleged trader
5 misconduct”⁷. Strombom’s analysis is wrongly based on a single spot price that moves up and down,
6 contrary to the two-way bid and offer prices that conspirators manipulated in opposite directions to
7 widen the spread between them, described in this Court’s *Forex Opinion* at p. 2 and the Plea
8 Agreements at par. 4 (e).

9 15. Dr. Strombom goes on to provide the following example as an illustration to his
10 theory:⁸

11 *“Suppose a hypothetical EUR/USD retail rate was artificial due to manipulation on two days,*
12 *such that it was artificially inflated by one cent on the first day and artificially deflated by one*
13 *cent on the second day. If a hypothetical plaintiff purchased €1,000 on the first day and €2,000*
14 *on the second day, then the plaintiff would not incur any damages, as the increase in U.S.*
15 *Dollars the plaintiff paid to purchase Euros on the first day would be more than offset by a*
16 *greater decrease in U.S. Dollars the plaintiff paid to purchase Euros on the second day.”*

17 16. Dr. Strombom concludes that any damage analysis will require “determining the
18 direction and magnitude of any artificiality in retail rates” and “netting gains and losses across all
19 putative class members”⁹. Dr. Strombom goes on to state that my analysis and proposed damages
20 methodology “...fails to capture benefits that may have accrued to certain putative class members
21 from artificiality in retail rates”¹⁰.

22 17. In deposition, Dr. Strombom claims that in a price-fixing case, the purchase of an
23 article that is price-fixed “...could either be an injury or a benefit...” due to “...the bidirectional
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25 ⁶ Expert Report of Bruce Strombom, March 4, 2022, par. 73.

26 ⁷ Expert Report of Bruce Strombom, March 4, 2022, par. 73.

27 ⁸ Expert Report of Bruce Strombom, March 4, 2022, par. 74.

28 ⁹ Expert Report of Bruce Strombom, March 4, 2022, par. 75.

¹⁰ Expert Report of Bruce Strombom, March 4, 2022, par. 76.

1 nature of the potential impact of the conduct on spot market rates...” which could be an increase or a
 2 decrease.¹¹ Dr. Strombom further explained: “[i]f the conduct could either increase or decrease the
 3 price and create an artificiality that's either an increase over the competitive price or decrease over
 4 the -- a decrease relative to the competitive price (and by competitive price, I mean the price that
 5 would have existed absent the alleged misconduct), then depending on what side of the transaction
 6 you're on, whether you're buying or selling, you could either be harmed if there's an overcharge or
 7 you could benefit if there was an -- an undercharge. So it could -- it could work in either
 8 direction”¹².

9 18. I disagree with Dr. Strombom’s position that is based on the theory that there is a
 10 single price that moves up and down, since both the Plea Agreements and this Court’s *Forex*
 11 Opinion and Order describe two-way prices, a bid and offer (ask) price in which the co-conspirators
 12 sought to widen the spread between them, “which allow them to buy lower and sell higher”¹³.

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]¹⁴.

16 Therefore, [REDACTED]

17 [REDACTED] As discussed above, the only way for
 18 Plaintiffs to have *gained* from the conspiracy is if Defendants had conspired *against* their own best
 19 interest. Contrary to what is implied by Dr. Strombom, the conspiracy, if carried out effectively, can
 20 never lead to a gain by the client, but only a *loss*. This is because, as admitted in the Plea
 21 Agreements,¹⁵ Defendants “...acting as dealers in the FX Spot Market, entered into and engaged in a
 22 conspiracy to fix, stabilize, maintain, *increase* or *decrease* the price of, and rig *bids* and *offers* for,
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 25 ¹¹ Strombom Deposition, April 7, 2021, 117:8-24.

26 ¹² Strombom Deposition, April 7, 2021, 117:8-24.

27 ¹³ In Re Foreign Exchange Benchmark Rates Antitrust Litigation, Opinion and Order Dated September 3, 2019, p.2.

28 ¹⁴ Declaration of Jo-Anne E. Rivet, June 19, 2020, par. 5.

¹⁵ Expert Report of Bruce Strombom, March 4, 2022, par. 76.

1 the EUR/USD currency pair exchanged in the FX Spot Market...”¹⁶. Because the conspiracy was to
 2 widen the spread of the EUR/USD currency pair.

3 19. The primary reason for Dr. Strombom’s error is that he ignores the two-way bid and
 4 offer (ask) and bid/ask spread set forth in par. 4 (e) of the Plea Agreements and this Court’s *Forex*
 5 Opinion and Order, in which conspirators manipulated to widen the bid/ask spread. Instead, he
 6 attempts to calculate damages based on directional up and down moves of an imaginary single spot
 7 price, rather than comparing the rigged, supracompetitive price to the non-rigged, competitive price,
 8 for the ask and bid prices *separately*. He also ignores Defendants’ incentives, and assumes that
 9 Defendants would have *both increased the spread* on certain days by overcharging on the FX Spot
 10 Market, *and decreased the spread* on other days by undercharging on the FX Spot Market. A
 11 correction to Dr. Strombom’s example from par. 11 above would be as follows:

- 12 a. Start with a competitive ask-bid spread of 1.02-0.98, for a spread of 4 cents on a
 13 dollar.¹⁷ In a competitive market, Defendants would earn 4 cents per dollar on a
 14 full circle transaction, by selling 1,000 euros for 1,020 dollars and repurchasing
 15 1,000 euros for 980 dollars, thus netting 40 dollars.
- 16 b. On day one, assume that Defendants conspired to artificially increase the ask
 17 price by 1 cent. Hypothetical Plaintiff purchases 1,000 Euro at the
 18 supracompetitive ask price of 1.03 rather than 1.02, and pays 1,030 dollars rather
 19 than 1,020 dollars. Damages to Hypothetical Plaintiff would be 10 dollars.
- 20 c. On day two, Dr. Strombom would have us believe that Defendants would
 21 conspire to *decrease* the offer price from 1.02 to 1.01, and that as a result, when
 22 Hypothetical Plaintiff would purchase another 2,000 Euros, Hypothetical Plaintiff
 23 would gain 20 dollars, which, when netted against day one’s 10 dollar loss leads
 24 to a 10 dollars net gain. But this second portion of Dr. Strombom’s example is
 25 not reasonable, as it would be ineffective for Defendants to conspire to *decrease*
 26

27 ¹⁶ Strombom Deposition, April 7, 2021, 118:15-25.

28 ¹⁷ Calculated as 1.02 less 0.98.

the price at which they sell euros. The reduced offer price would *still be higher than if the conspiracy were not occurring* and under damage theory, would not lead to an offsetting gain to Plaintiffs, as it was not caused by Defendants conduct.

20. In this regard, Dr. Strombom testified in deposition that the standard for the consideration of an offset in a damage analysis is "...from an economic perspective, in order to put the plaintiff in the same economic position that they would have been but for the alleged misconduct"¹⁸. A comparison of a "but-for" world absent a defendant's alleged misconduct - to an actual world - in which the alleged injury occurred, is standard practice in damage calculations to isolate the effect of defendant's alleged misconduct.

21. Another variant of Dr. Strombom's netting theory is that Plaintiffs losses would be offset by potential gains upon redemption¹⁹, which I understand to mean that Plaintiff End-users damaged when buying Euros might experience a gain when redeeming their Euros for US Dollars. This fails for two reasons. First, if Dr. Strombom means to assert that Plaintiff End-users' offsetting gain is caused by an increase in the price which Plaintiff later sell Euros as compared to the price at which they initially purchased them, that is caused by factors *other than the Defendants' conspiracy*, this cannot lead to an offset, as such an increase in the bid price would have occurred anyway, regardless of the Defendants' conspiracy. The relevant factor in assessing damages is that the increased bid price would *still be lower than if the conspiracy were not occurring*. Dr. Strombom acknowledges in his deposition that a damages analysis seeks to put Plaintiff End-users "in the same economic position they would have been but for the alleged misconduct"²⁰. Market fluctuations in exchange rates that would have occurred anyway are not relevant to calculations of damages. What is relevant is how much the price at which Plaintiff End-users can purchase or sell Euros is less favorable due to the conspiracy.

¹⁸ Strombom Deposition, April 7, 2021, 221:14-21.

¹⁹ Expert Report of Bruce Strombom, March 4, 2022, par. 73.

²⁰ Strombom Deposition, April 7, 2021, 221:14-21.

22. Second, if Dr. Strombom means that such an offsetting gain would be caused by Defendants conspiring to *lower* the bid price at which they would repurchase the Euros from Plaintiff End-users, then as discussed above at par. 18, this implies that Dr. Strombom believes that Defendants conspired *against* their own best interest, to decrease rather than increase the bid price at which they would sell dollars for euros. This is illogical.

23. Dr. Strombom states that I did not provide “any method for determining whether Defendants’ alleged manipulation [REDACTED] [REDACTED] Such an analysis is not required to calculate damages, as Defendants, in their Plea Agreements, have admitted to a conspiracy “...which began at least as early as December 2007 and *continued* until at least January 2013”²². Defendants further admitted in their Plea Agreements that their conspiracy was to “*eliminate competition* in the purchase and sale of the EUR/USD currency pair”.²³ Since Defendants pled guilty to agreeing to eliminate competition during a continuing period of conspiracy, the entirety of the FX market pricing structure was corrupted, requiring a calculation of damages on an aggregate basis, and precluding tracing of individual transactions contrary to Dr. Strombom’s claim.

24. I understand that this is further reflected in the Plea Agreements that they carried out their conspiracy “...*by various means and methods* including, in certain instances by: (i) coordination the trading of the EUR/USD currency pair in connection with European Central Bank and World Markets/Reuters benchmark currency ‘fixes’ which occurred at 2:15 PM (CET) and 4:00 PM (GMT) each trading day;” and in non-fix conduct “(ii) refraining from certain trading behavior, by withholding bids and offers when one conspirator held an open risk position, so that the price of the currency traded would not move in a direction adverse to the conspiracy with an open risk position”²⁴. Thus, the conspiracy was not limited to just manipulating the spread of the currency fixes.

²¹ Expert Report of Bruce Strombom, March 4, 2022, par. 41.

²² Citicorp Plea Agreement, May 20, 2015, ¶ 2, JP Morgan Plea Agreement, May 20, 2015, ¶ 2.

²³ Citicorp Plea Agreement, May 20, 2015, ¶ 4, JP Morgan Plea Agreement, May 20, 2015, ¶ 4.

²⁴ Citicorp Plea Agreement, May 20, 2015, ¶ 4(i), JP Morgan Plea Agreement, May 20, 2015, ¶ 4(i).

1 25. In addition, I understand that effect of Defendants' conspiracy on the market has been
2 agreed to by Defendants for the purpose of their sentencing, and this effect is to have widened the
3 EUR/USD spread by 0.0003 dollars, a figure which can be used to calculate damages²⁵.
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6 I declare under penalty of perjury that the foregoing is true and correct.
7

8 Executed this 16th Day in July 2022 at Los Altos, California.
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13 CARL S. SABA, MBA, CVA, ASA, ABV
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27 ²⁵ United States of America v. Barclays PLC; Citicorp, JP Morgan Chase & Co.; The Royal Bank of Scotland, PLC,
28 No. 3:15-CR-00077(SRU), No. 3:15-CR-00078(SRU), No. 3:15-CR-00079(SRU), and No. 3:15-CR-00080(SRU), U.S
District Court for the District of Connecticut, January 5, 2017, pp. 8:4-9:23.